Gulfwide Offshore Activities Data System for Calendar Year 2011 (GOADS-2011)

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BOEM/BOEMRE (aka MMS) Introduction

- Background
  - BOEM AQ Laws and Regulations
  - What is GOADS?
  - Purpose of GOADS
- GOADS-2011
  - Required Structures
  - Schedule
  - BOEM Website
  - FAQs

BOEM AQ Laws and Regulations

- OCS Lands Act (43 U.S.C. 1334 (a)(8))
  - BOEM has the authority and responsibility to comply with onshore National Ambient Air Quality Standards (NAAQS), as established in the Clean Air Act
- Federal Clean Air Act Amendments of 1990
  - Establishes NAAQS
  - Requires BOEM-EPA coordination
  - Designated OCS area responsibility

What is GOADS?

- Gulfwide Offshore Activities Data System (GOADS)
- CY emissions data for NAAQS criteria pollutants (CO, SO_2, NO_x, PM_{10}, $PM_{2.5}$, VOC) and greenhouse gases (CO_2, CH_4, N_2O)
- Platform and non-platform emissions on the OCS in the Gulf of Mexico (Central & Western)
- Past efforts- 2000, 2005, and 2008

Purpose of GOADS

- The collection and compilation of an air emissions inventory is one of the tasks BOEM conducts to assure coordination of air pollution control regulations between OCS offshore sources and state's sources onshore (as per Sec 328(b) of the 1990 CAAA).
- BOEM's ongoing assessment of the potential impacts of emissions from oil and gas exploration, development, and production from the Gulf of Mexico OCS to onshore areas.
- Inventory will be used to augment the BOEM NEPA process by providing a more accurate inventory to compute emission trends and to perform necessary air quality impacts assessments.

Required Structures

- All structures in the Western Gulf of Mexico (OCS west of 87° 30’ West longitude)
- Flag minor sources exempt from reporting:
  - Living quarters
  - Caissons
  - Wellhead protectors
  - Other (describe)

GOADS-2011 Schedule

- Collect activity data for input into GOADS-2011 from January 1, 2011 to December 31, 2011
- All activity data must be submitted to BOEM by April 18, 2012

BOEM GOADS Website

- http://www.gomr.boemre.gov/homepg/regulate/environ/airquality/goads.html
- 2000 & 2005 Final Reports and Databases
- 2008 Report and Databases Status
- Included on the “2011 Effort” website:
  - NTL No. 2010-G06
  - GOADS-2011 Software and User’s Guide
  - How to Submit Emissions Reports (E-reporting)
  - Technical Support/Updates- FAQS and Master List for Importing

Updates for GOADS-2011

- The GOADS-2011 Registered User must now be an employee of the company that owns structures on the OCS and is the primary contact person responsible for submitting surveys to the BOEM.
- Only the company can request static data and submit activity data to BOEM (no contractors).
- E-reporting- please check our website for updates
- Volumes vented and flared will be compared and reconciled to OGOR reports. Before submitting data to BOEM, please make sure your volumes match between these reports.
- EPA Greenhouse Gas Reporting Rule
  - Subpart C (Combustion) finalized
  - Subpart W (Venting, flaring, fugitives) not finalized but draft suggests using latest GOADS to report to EPA.

GOADS-2011 Structure and Features

- Data Organization
- Static Platform and Equipment Descriptive Data
- Dynamic Equipment Activity Data
- Other Features
- Interaction with GOADS-2008
- QA Summary Form
- Exporting Files

Data Organization for GOADS-2011

- User/operator information: static
- Platform description data: static
- Equipment description data: static
- Monthly platform and equipment activity data: dynamic

Examples of Static Platform Descriptive Data

- User ID
- Address
- Complex ID
- Structure ID
- Area
- Block
- Latitude/longitude
- Lease number
- Sales gas composition

Examples of Static Equipment Descriptive Data

- Equipment ID
- Stack parameters
- Fugitive component count
- Boilers: heat input, fuel usage rate; fuel heating value
- Diesel engines: horsepower, fuel usage rate, fuel heating value
- Mud degassing: mud type

Examples of Static Equipment Descriptive Data, continued

- Natural gas turbines and engines: horsepower, fuel usage rate, fuel heating value, make and model
- Pneumatic pumps: make and model
- Pressure level controllers: make and model
- Storage tanks: dimensions

Examples of Dynamic Equipment Activity Data (monthly)

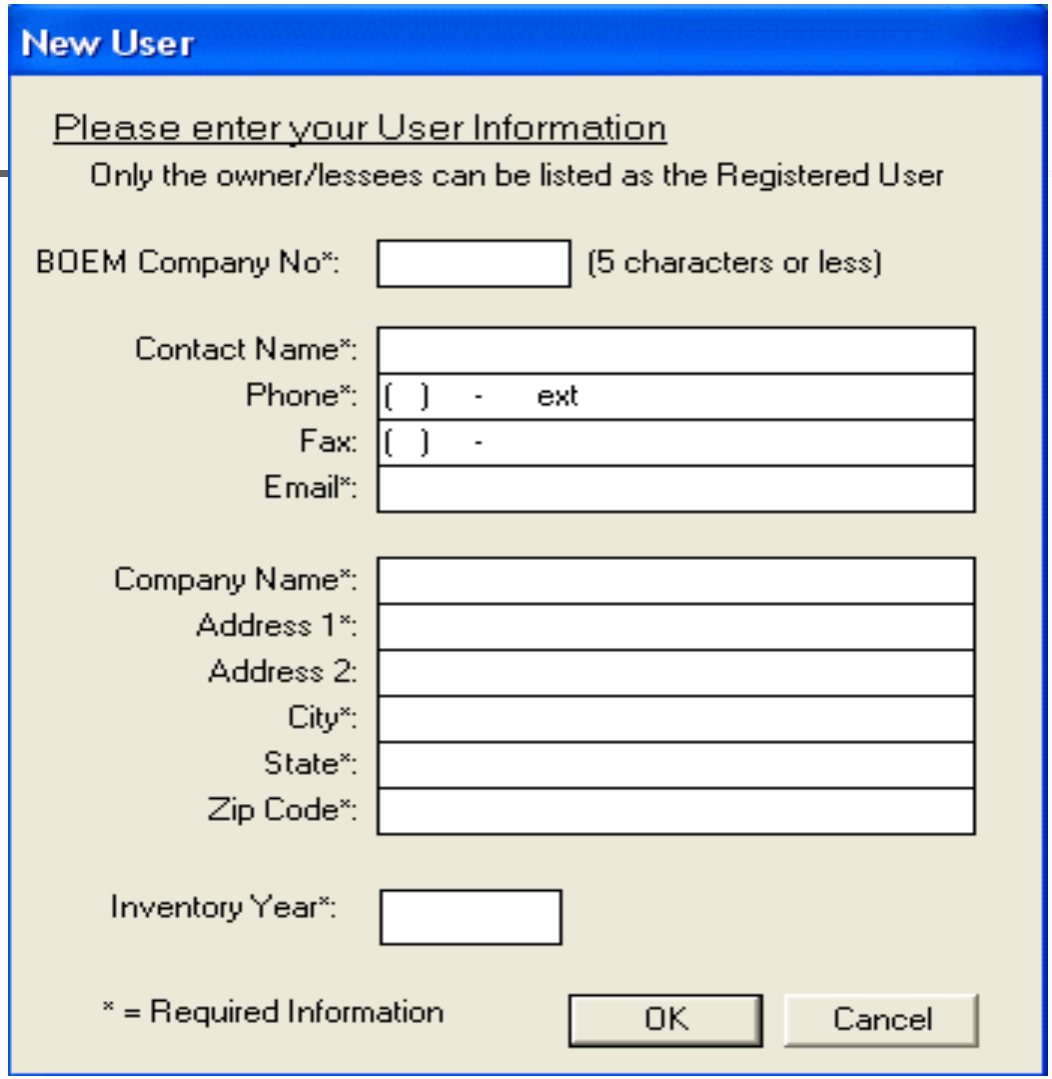
- Operating hours
- Total fuel used
- Processed throughput
- Volume flared
- Volume vented

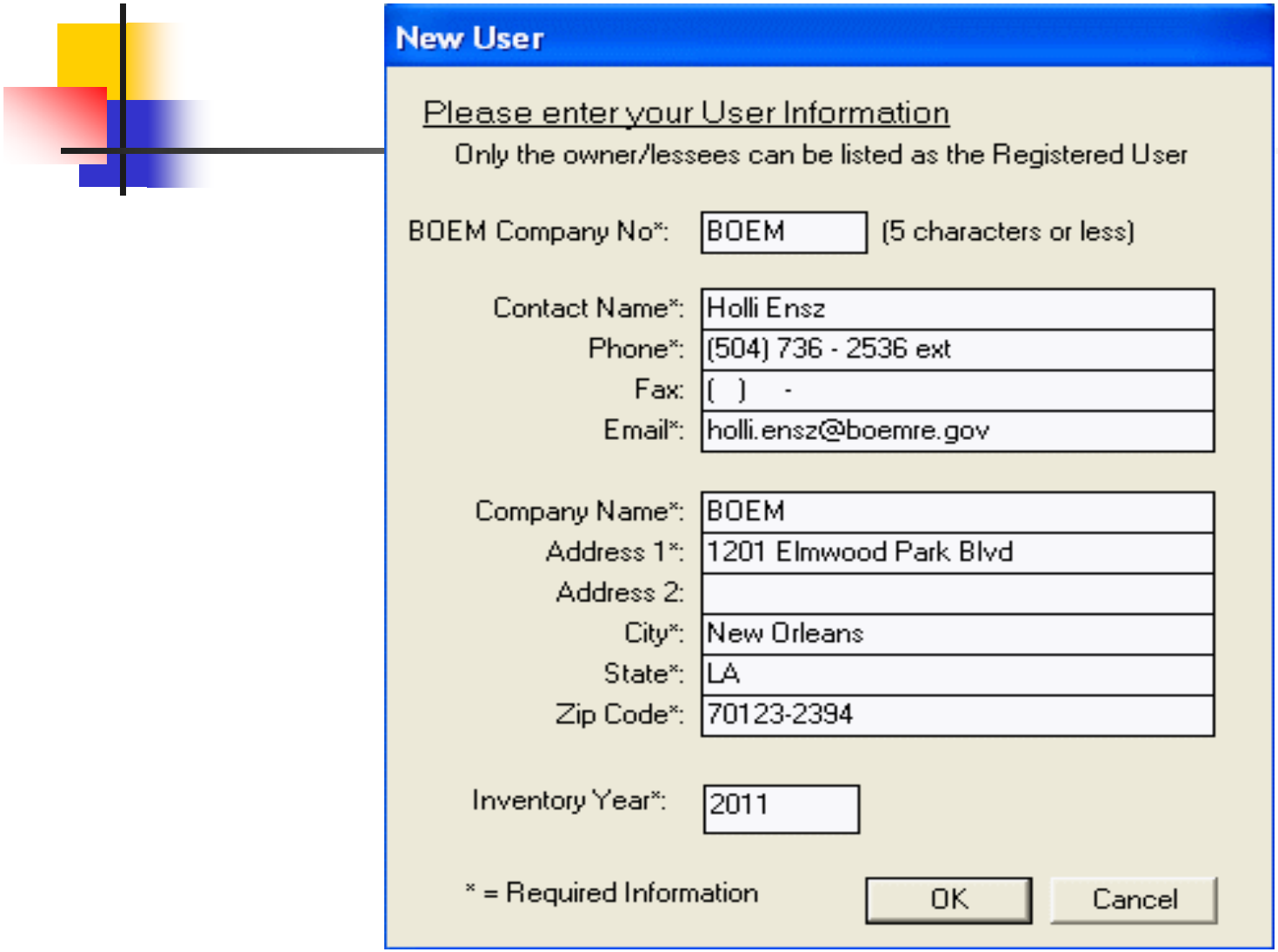
Other Features of GOADS-2011

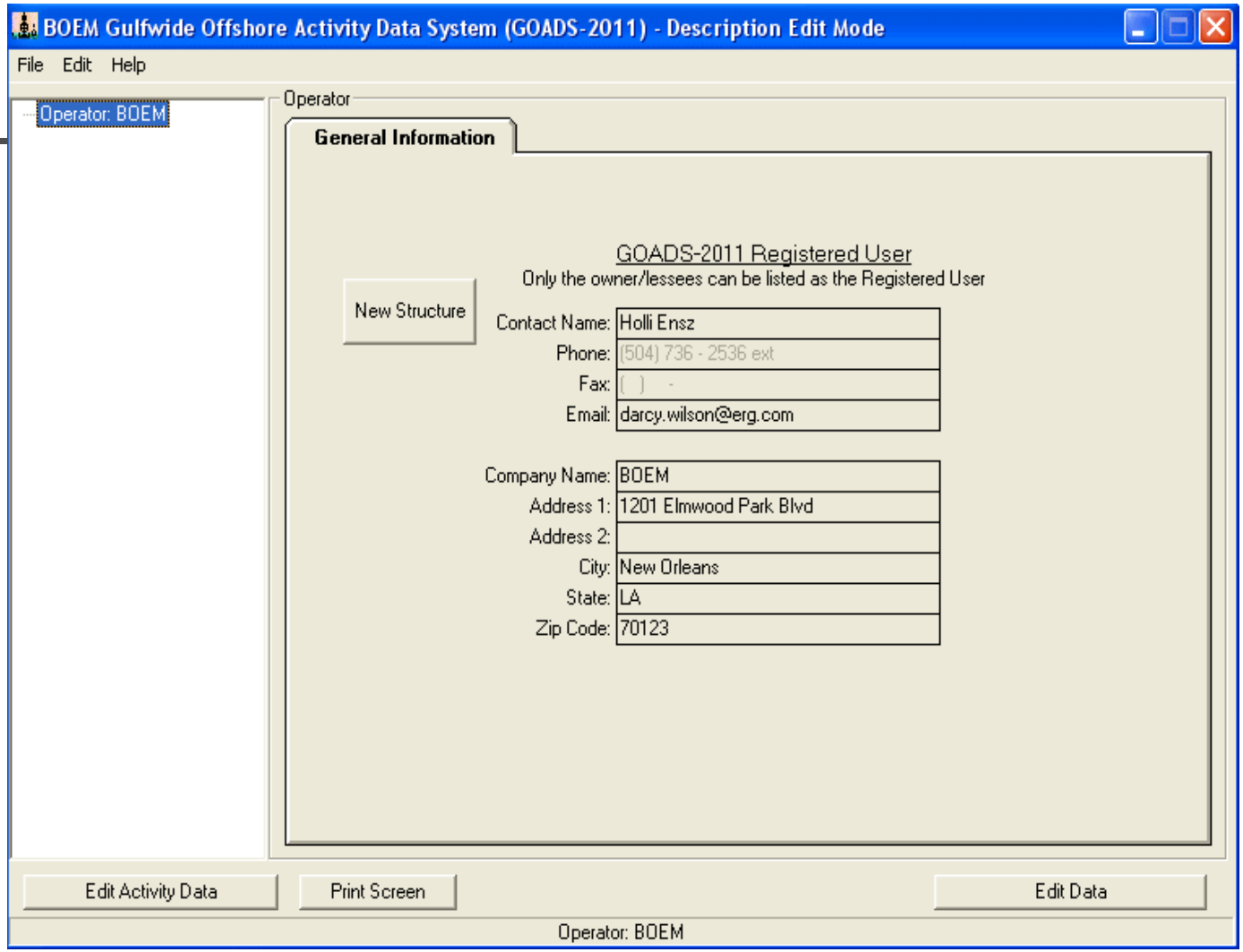
- Access file import and export features
- Excel export feature
- Flag inactive platforms or equipment as “No Emissions to Report”
- Flag minor sources exempt from reporting:
  - Living quarters
  - Caissons
  - Wellhead protectors
  - Other (describe)

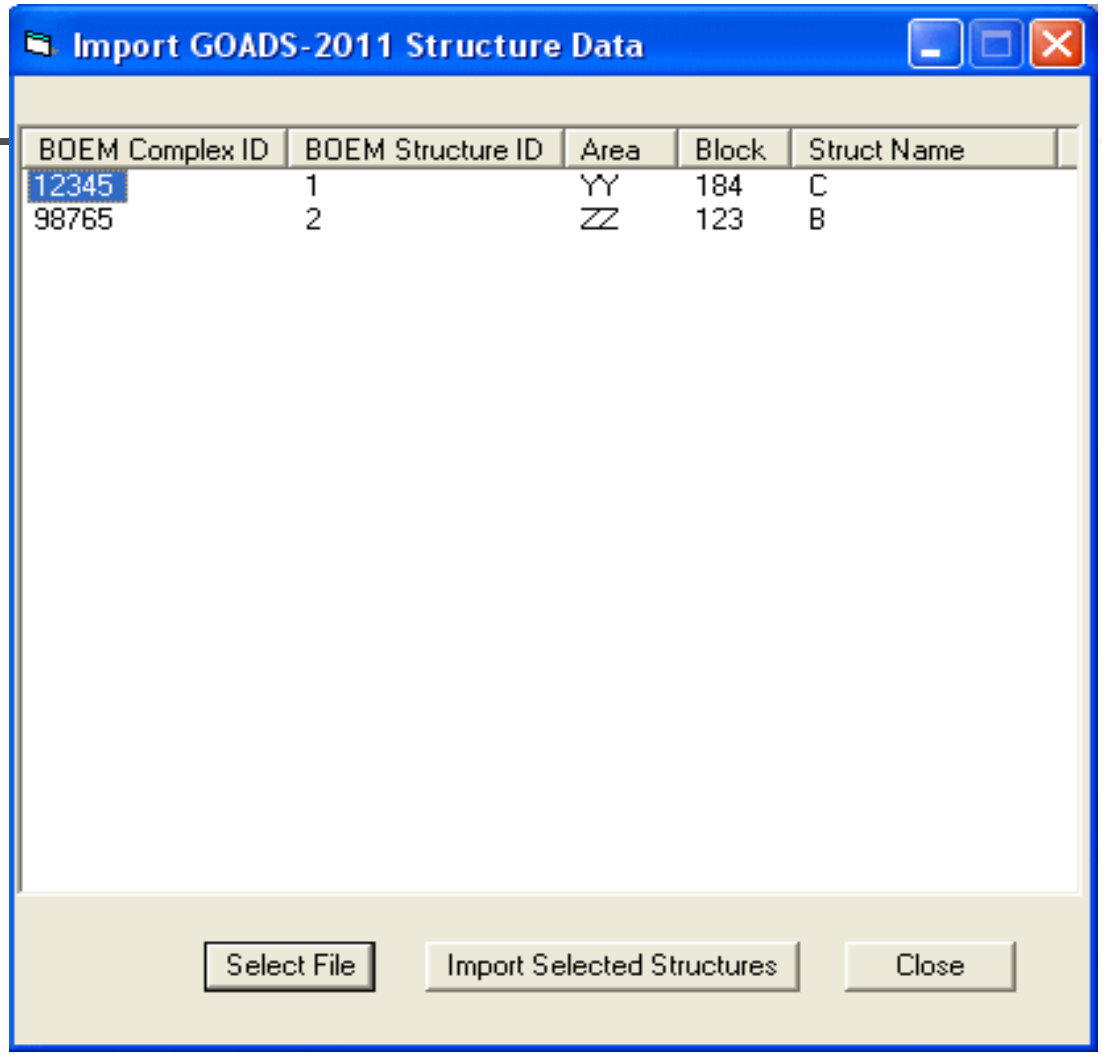
Interaction with GOADS-2008

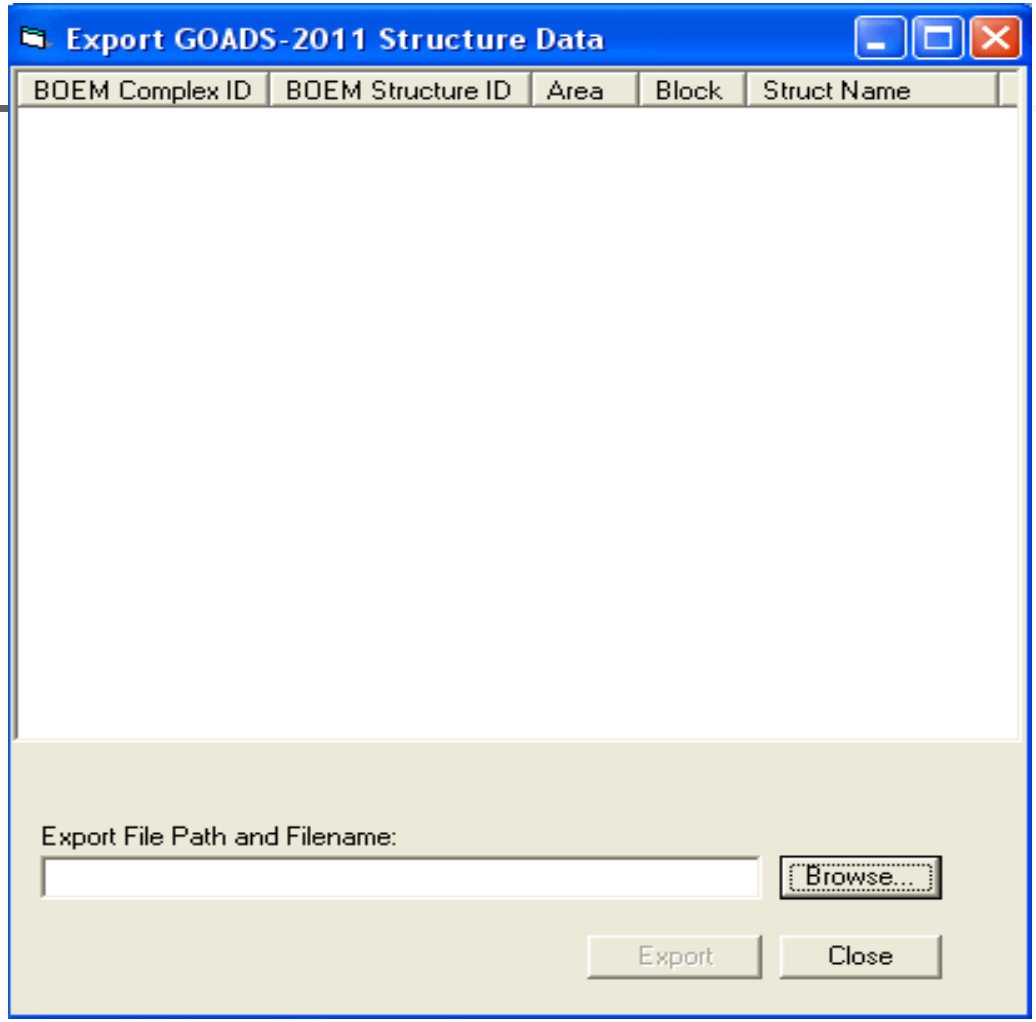
- Import feature for GOADS-2008 static description platform and equipment data
- Request GOADS-2008 files from BOEM for import into GOADS-2011
- January, 2011 descriptive fields populated
- Review data closely and edit as needed
- Create records for new structures and equipment that were not in place in 2008
- Create records for minor sources flagged in GOADS-2008

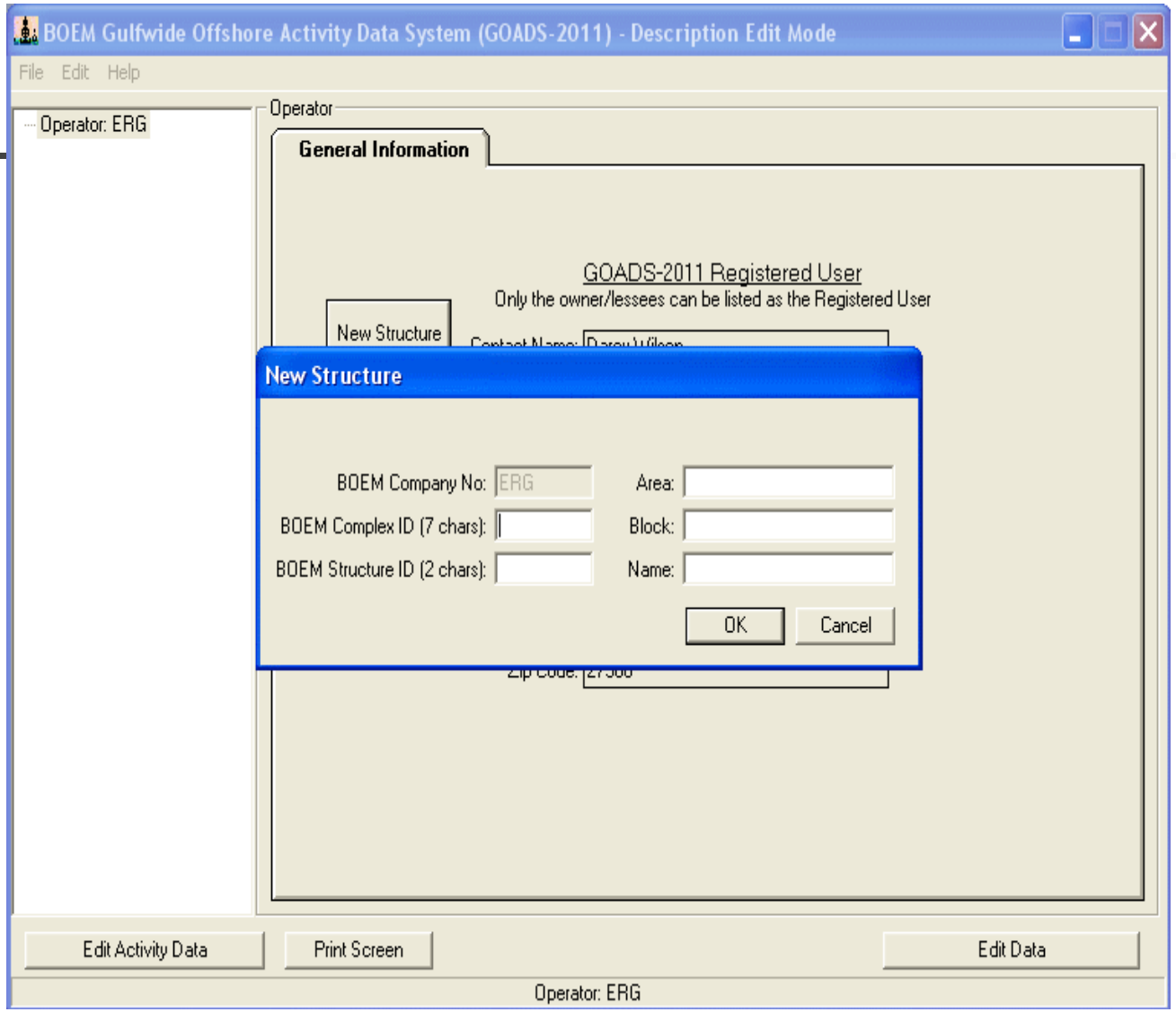

New User
Please enter your User Information
Only the owner/lessees can be listed as the Registered User
BOEM Company No*:
(5 characters or less)
Contact Name*:
Phone*:
( ) - ext
Fax:
( ) -
Email*:
Company Name*:
Address 1*:
Address 2:
City*:
State*:
Zip Code*:
Inventory Year*:
* = Required Information
OK
Cancel

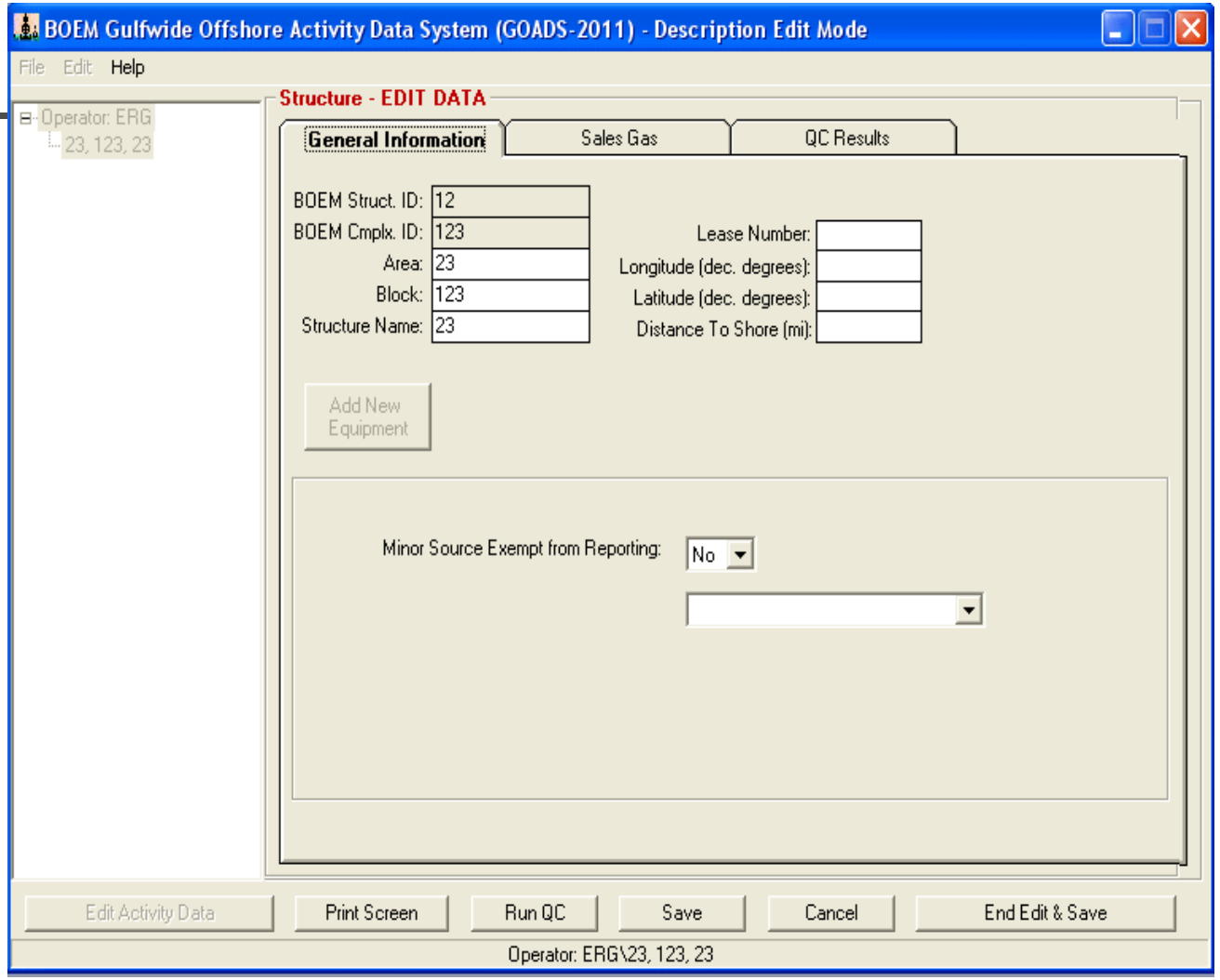

New User
Please enter your User Information
Only the owner/lessees can be listed as the Registered User
BOEM Company No*:
BOEM
(5 characters or less)
Contact Name*:
Holli Ensz
Phone*:
(504) 736 - 2536 ext
Fax:
( ) -
Email*:
holli.ensz@boemre.gov
Company Name*:
BOEM
Address 1*:
1201 Elmwood Park Blvd
Address 2:
City*:
New Orleans
State*:
LA
Zip Code*:
70123-2394
Inventory Year*:
2011
* = Required Information
OK
Cancel

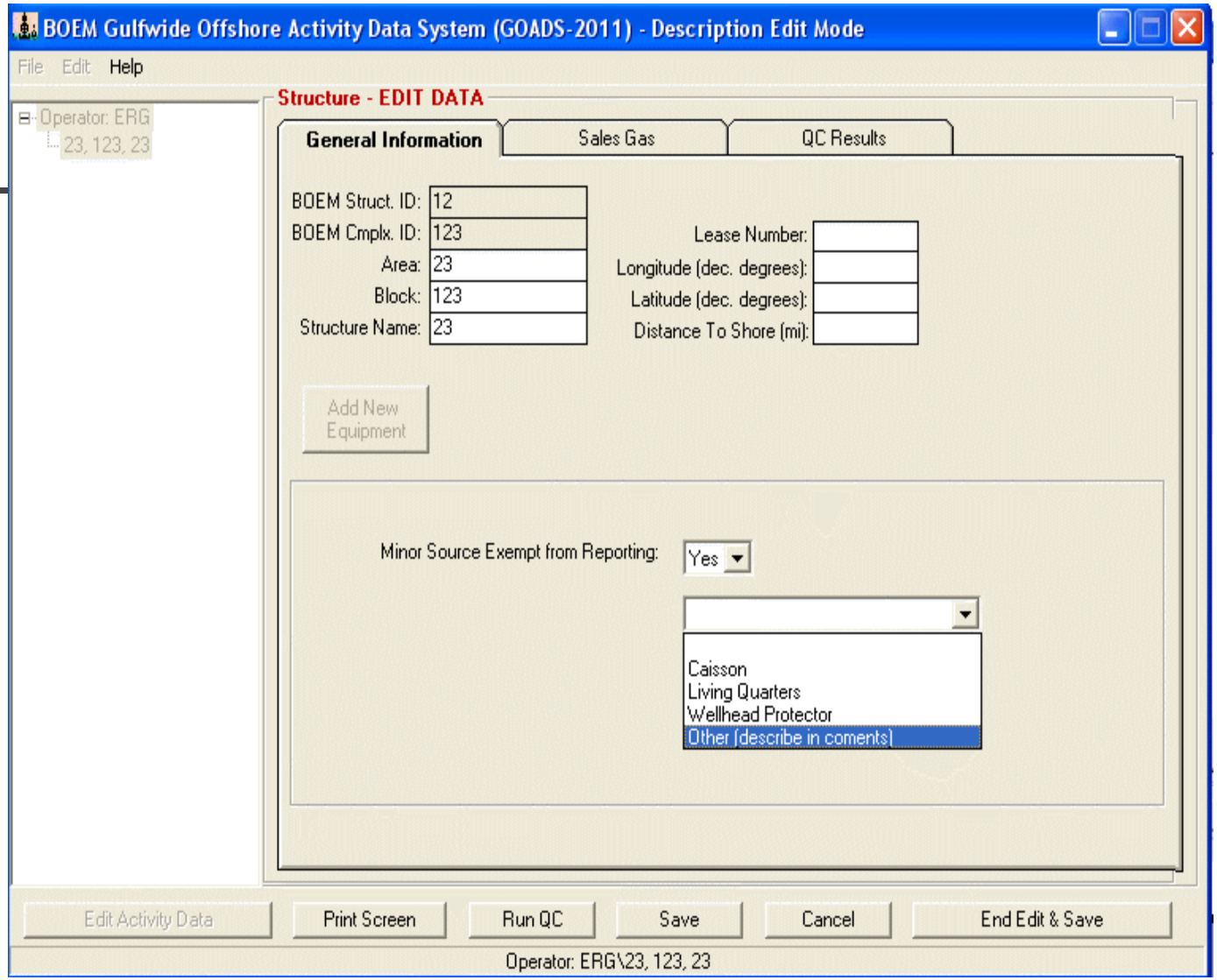

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: BOEM
Operator
General Information
GOADS-2011 Registered User
Only the owner/lessees can be listed as the Registered User
New Structure
Contact Name: Holli Ensz
Phone: (504) 736 - 2536 ext
Fax: ( ) -
Email: darcy.wilson@erg.com
Company Name: BOEM
Address 1: 1201 Elmwood Park Blvd
Address 2:
City: New Orleans
State: LA
Zip Code: 70123
Edit Activity Data
Print Screen
Edit Data
Operator: BOEM

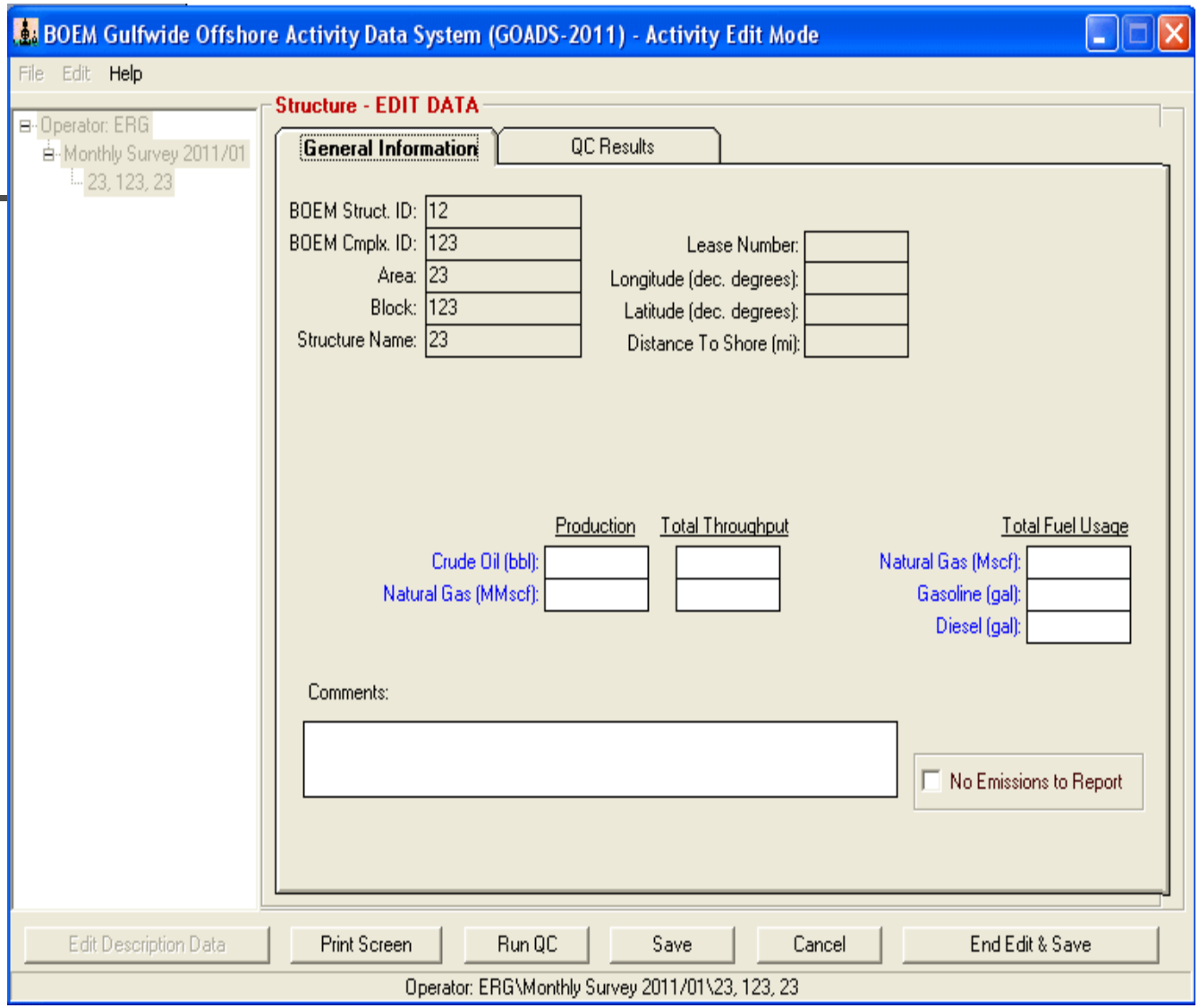

Import GOADS-2011 Structure Data
BOEM Complex ID
BOEM Structure ID
Area
Block
Struct Name
12345
1
YY
184
C
98765
2
ZZ
123
B
Select File
Import Selected Structures
Close

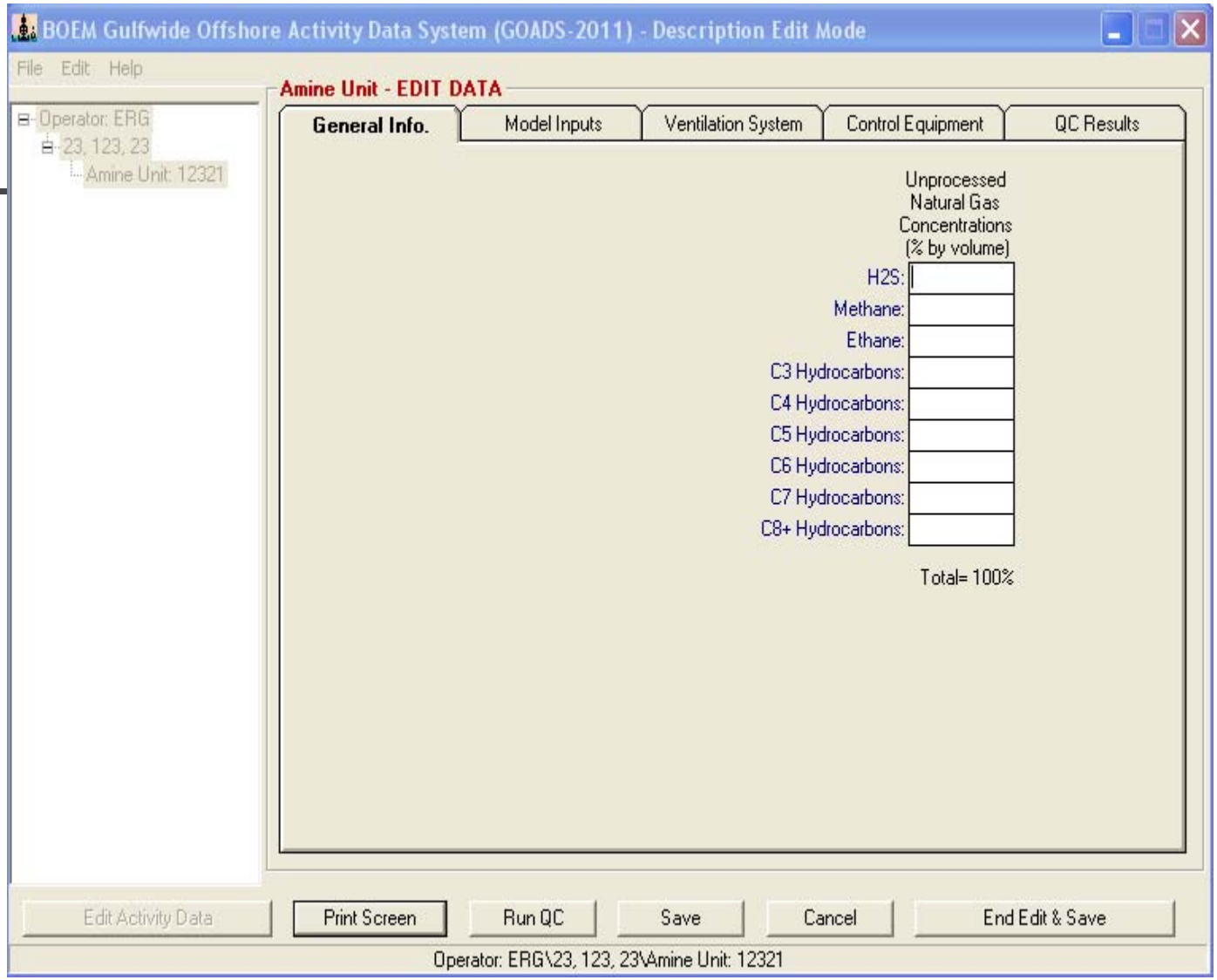

Export GOADS-2011 Structure Data
BOEM Complex ID
BOEM Structure ID
Area
Block
Struct Name
Export File Path and Filename:
Browse...
Export
Close

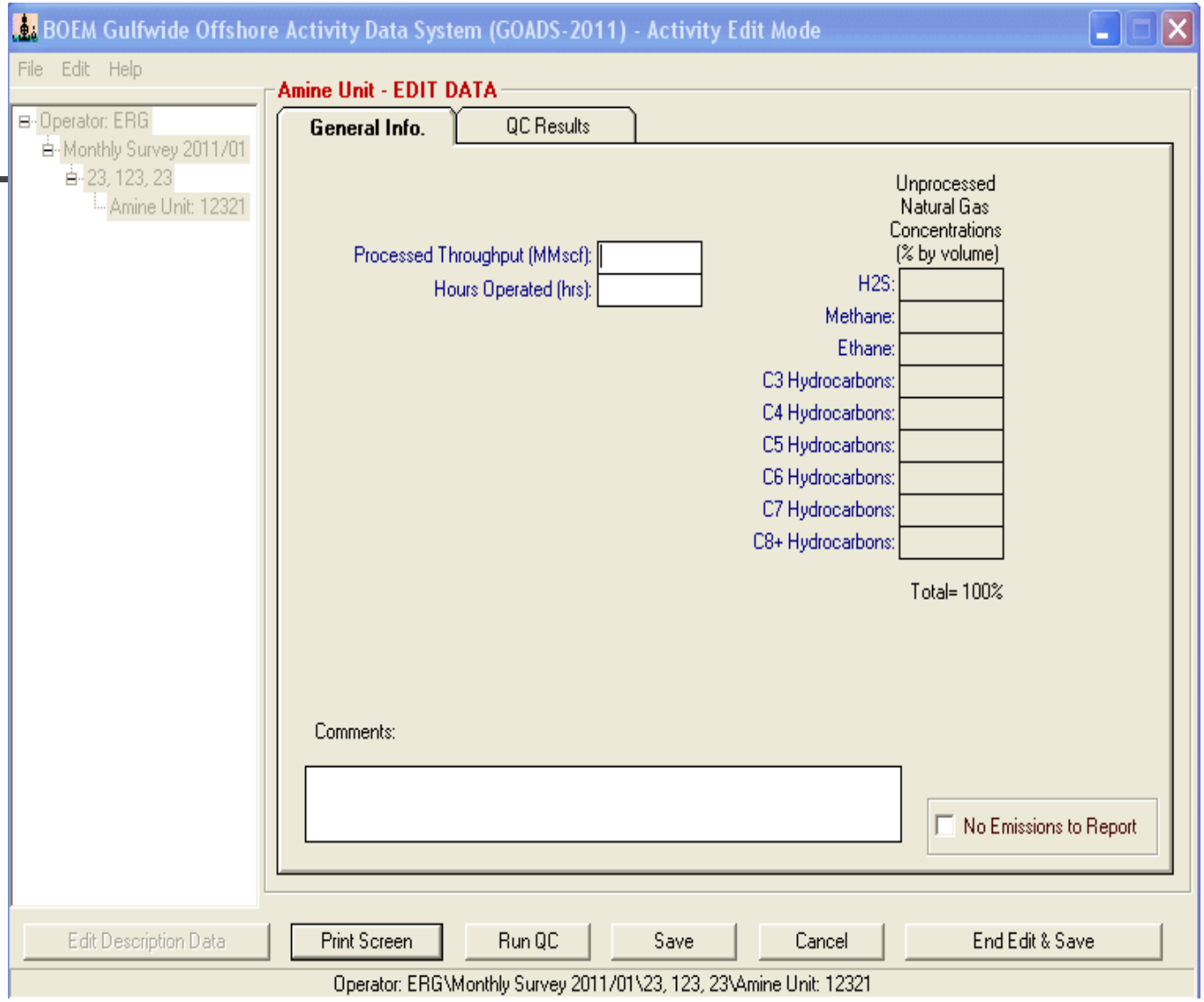

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File Edit Help
Operator: ERG
Operator
General Information
GOADS-2011 Registered User
Only the owner/lessees can be listed as the Registered User
New Structure
New Structure
BOEM Company No: ERG
Area:
BOEM Complex ID (7 chars):
Block:
BOEM Structure ID (2 chars):
Name:
OK
Cancel
Edit Activity Data
Print Screen
Edit Data
Operator: ERG

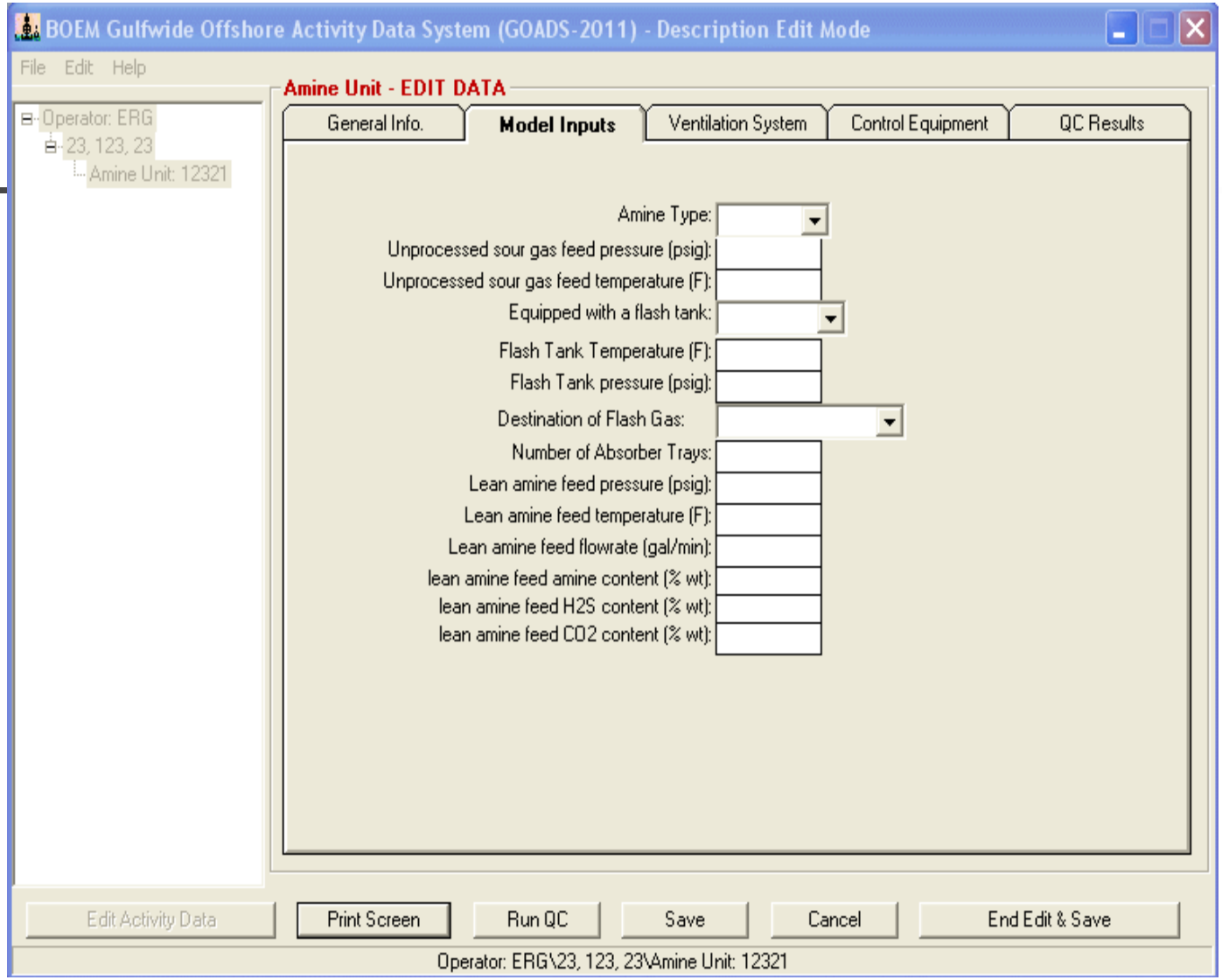

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Structure - EDIT DATA
General Information
Sales Gas
QC Results
BOEM Struct. ID: 12
BOEM Cmplx. ID: 123
Area: 23
Block: 123
Structure Name: 23
Lease Number:
Longitude (dec. degrees):
Latitude (dec. degrees):
Distance To Shore (mi):
Add New Equipment
Minor Source Exempt from Reporting: No
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23

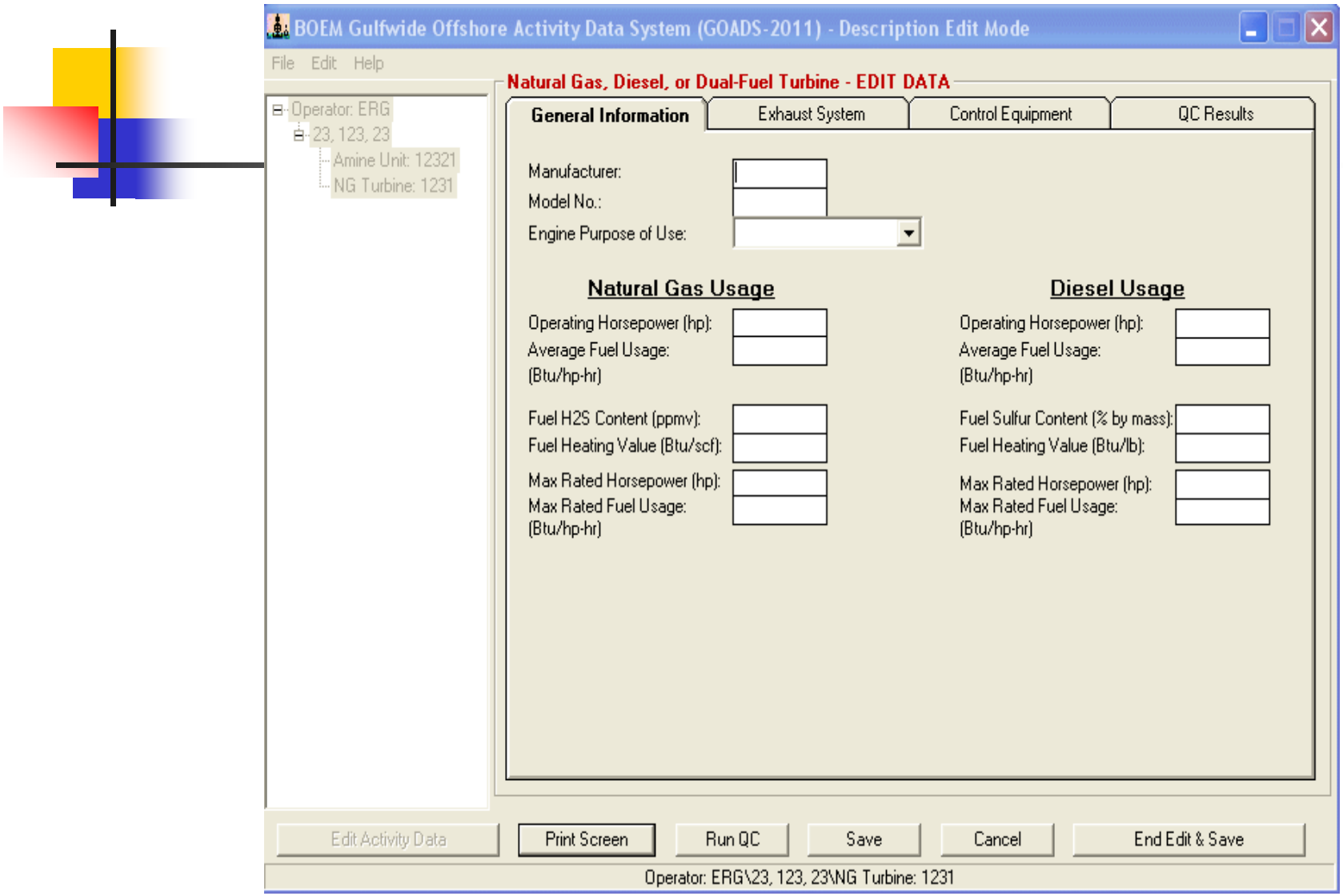

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Structure - EDIT DATA
General Information
Sales Gas
QC Results
BOEM Struct. ID: 12
BOEM Cmplx. ID: 123
Area: 23
Block: 123
Structure Name: 23
Lease Number:
Longitude (dec. degrees):
Latitude (dec. degrees):
Distance To Shore (mi):
Add New Equipment
Minor Source Exempt from Reporting:
Yes
Caisson
Living Quarters
Wellhead Protector
Other (describe in coments)
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23

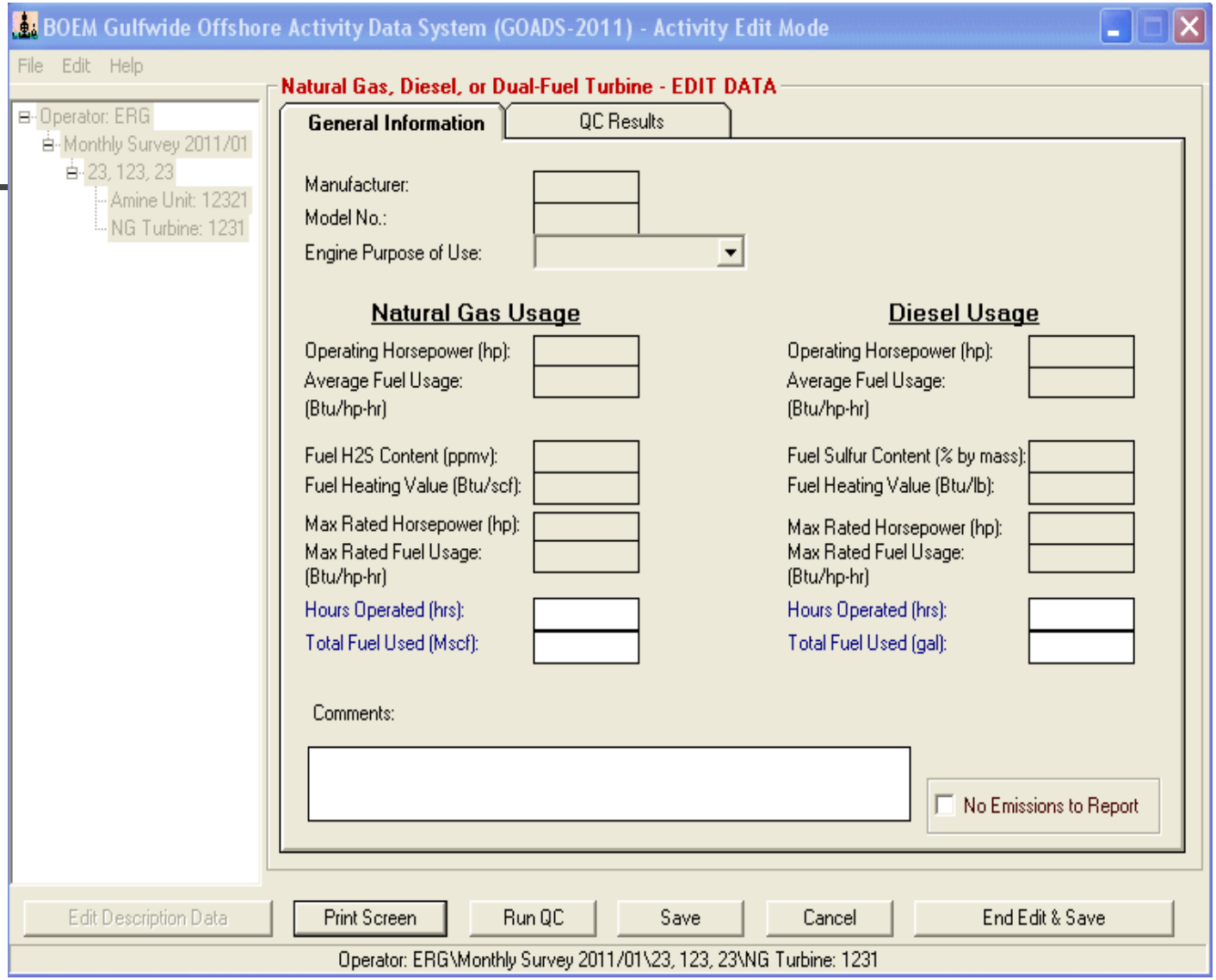

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File
Edit
Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Structure - EDIT DATA
General Information
QC Results
BOEM Struct. ID: 12
BOEM Cmplx. ID: 123
Area: 23
Block: 123
Structure Name: 23
Lease Number:
Longitude (dec. degrees):
Latitude (dec. degrees):
Distance To Shore (mi):
Production
Total Throughput
Total Fuel Usage
Crude Oil (bbl):
Natural Gas (MMscf):
Natural Gas (Mscf):
Gasoline (gal):
Diesel (gal):
Comments:
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File Edit Help
Operator: ERG
23, 123, 23
Amine Unit: 12321
Amine Unit - EDIT DATA
General Info.
Model Inputs
Ventilation System
Control Equipment
QC Results
Unprocessed Natural Gas Concentrations (% by volume)
H2S:
Methane:
Ethane:
C3 Hydrocarbons:
C4 Hydrocarbons:
C5 Hydrocarbons:
C6 Hydrocarbons:
C7 Hydrocarbons:
C8+ Hydrocarbons:
Total= 100%
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\Amine Unit: 12321


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File
Edit
Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Amine Unit: 12321
Amine Unit - EDIT DATA
General Info.
QC Results
Processed Throughput (MMscf):
Hours Operated (hrs):
Unprocessed Natural Gas Concentrations (% by volume)
H2S:
Methane:
Ethane:
C3 Hydrocarbons:
C4 Hydrocarbons:
C5 Hydrocarbons:
C6 Hydrocarbons:
C7 Hydrocarbons:
C8+ Hydrocarbons:
Total= 100%
Comments:
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23\Amine Unit: 12321


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Amine Unit: 12321
Amine Unit - EDIT DATA
General Info.
Model Inputs
Ventilation System
Control Equipment
QC Results
Amine Type:
Unprocessed sour gas feed pressure (psig):
Unprocessed sour gas feed temperature (F):
Equipped with a flash tank:
Flash Tank Temperature (F):
Flash Tank pressure (psig):
Destination of Flash Gas:
Number of Absorber Trays:
Lean amine feed pressure (psig):
Lean amine feed temperature (F):
Lean amine feed flowrate (gal/min):
lean amine feed amine content (% wt):
lean amine feed H2S content (% wt):
lean amine feed CO2 content (% wt):
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\Amine Unit: 12321


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Amine Unit: 12321
NG Turbine: 1231
Natural Gas, Diesel, or Dual-Fuel Turbine - EDIT DATA
General Information
Exhaust System
Control Equipment
QC Results
Manufacturer:
Model No.:
Engine Purpose of Use:
Natural Gas Usage
Operating Horsepower (hp):
Average Fuel Usage:
(Btu/hp-hr)
Fuel H2S Content (ppmv):
Fuel Heating Value (Btu/scf):
Max Rated Horsepower (hp):
Max Rated Fuel Usage:
(Btu/hp-hr)
Diesel Usage
Operating Horsepower (hp):
Average Fuel Usage:
(Btu/hp-hr)
Fuel Sulfur Content (% by mass):
Fuel Heating Value (Btu/lb):
Max Rated Horsepower (hp):
Max Rated Fuel Usage:
(Btu/hp-hr)
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\NG Turbine: 1231


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File Edit Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Amine Unit: 12321
NG Turbine: 1231
Natural Gas, Diesel, or Dual-Fuel Turbine - EDIT DATA
General Information
QC Results
Manufacturer:
Model No.:
Engine Purpose of Use:
Natural Gas Usage
Operating Horsepower (hp):
Average Fuel Usage:
(Btu/hp-hr)
Fuel H2S Content (ppmv):
Fuel Heating Value (Btu/scf):
Max Rated Horsepower (hp):
Max Rated Fuel Usage:
(Btu/hp-hr)
Hours Operated (hrs):
Total Fuel Used (Mscf):
Diesel Usage
Operating Horsepower (hp):
Average Fuel Usage:
(Btu/hp-hr)
Fuel Sulfur Content (% by mass):
Fuel Heating Value (Btu/lb):
Max Rated Horsepower (hp):
Max Rated Fuel Usage:
(Btu/hp-hr)
Hours Operated (hrs):
Total Fuel Used (gal):
Comments:
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23\NG Turbine: 1231

QA Summary Form

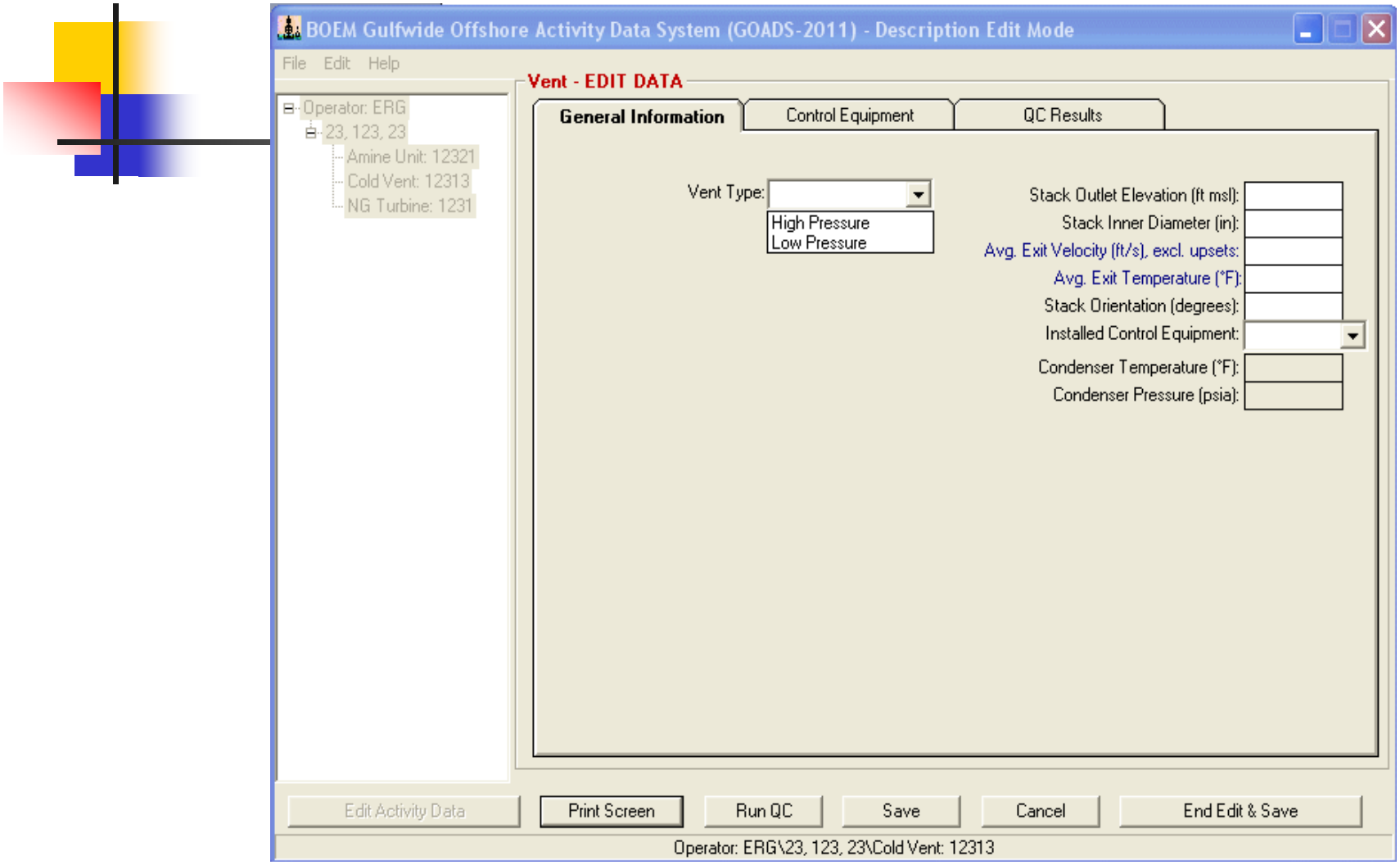
- Export PDF and submit with GOADS-2011 file
- Does not supersede QC results
- Identifies key data that are needed to calculate emission estimates
- Data fields listed in Appendix B of User's Guide

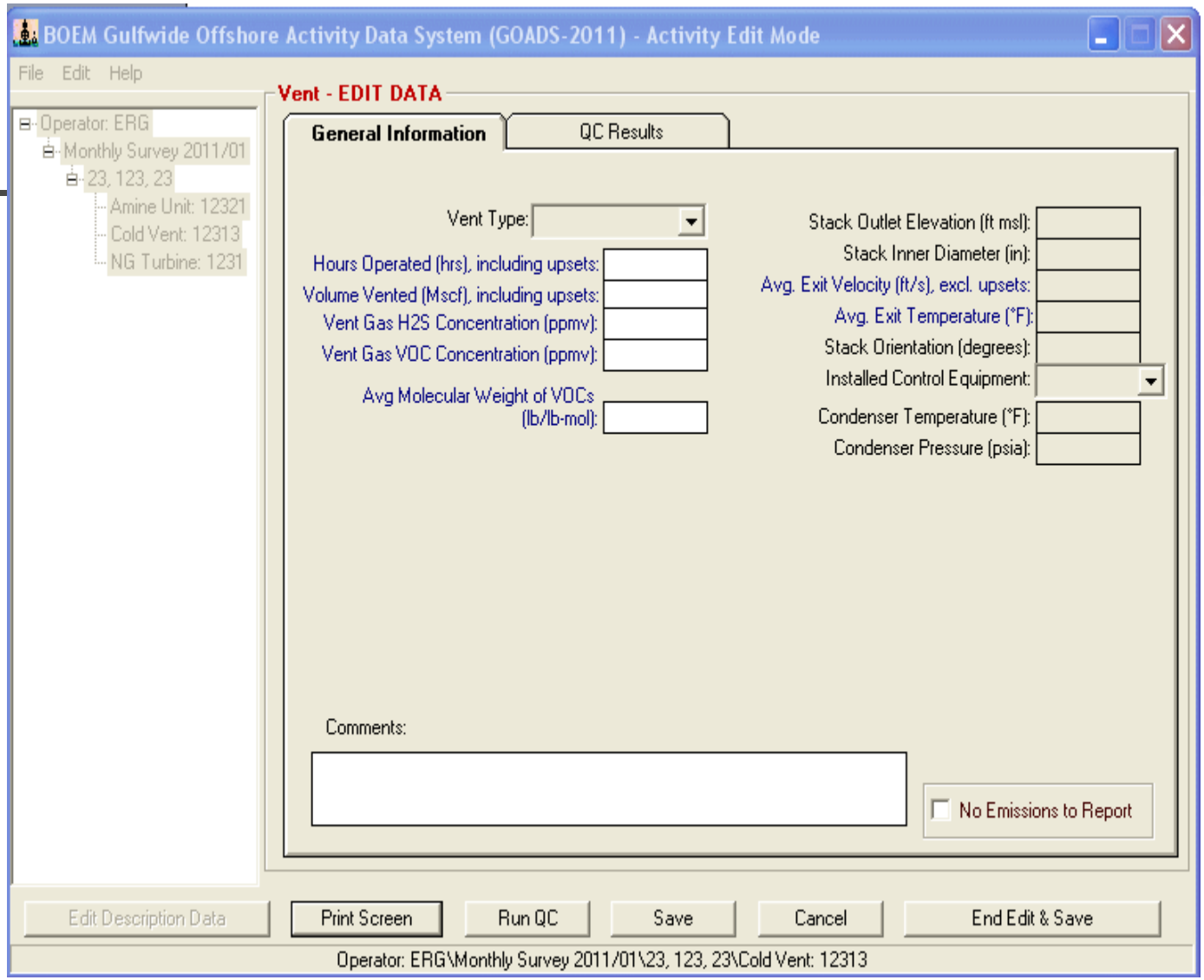
Exporting Files

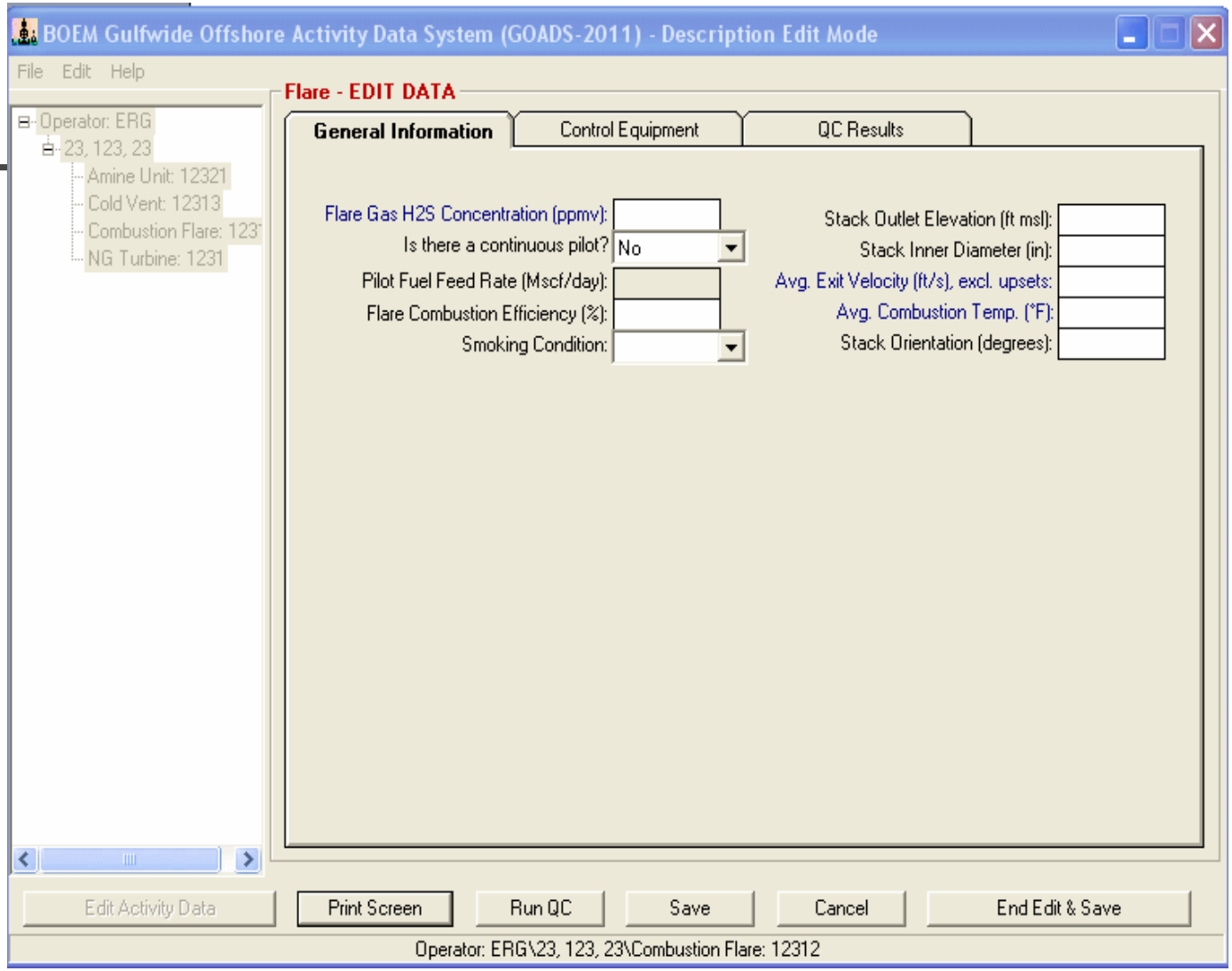
- Export entire inventory at one time for submittal to BOEM (preferred)
- Can export select monthly surveys
- Can export only descriptive data

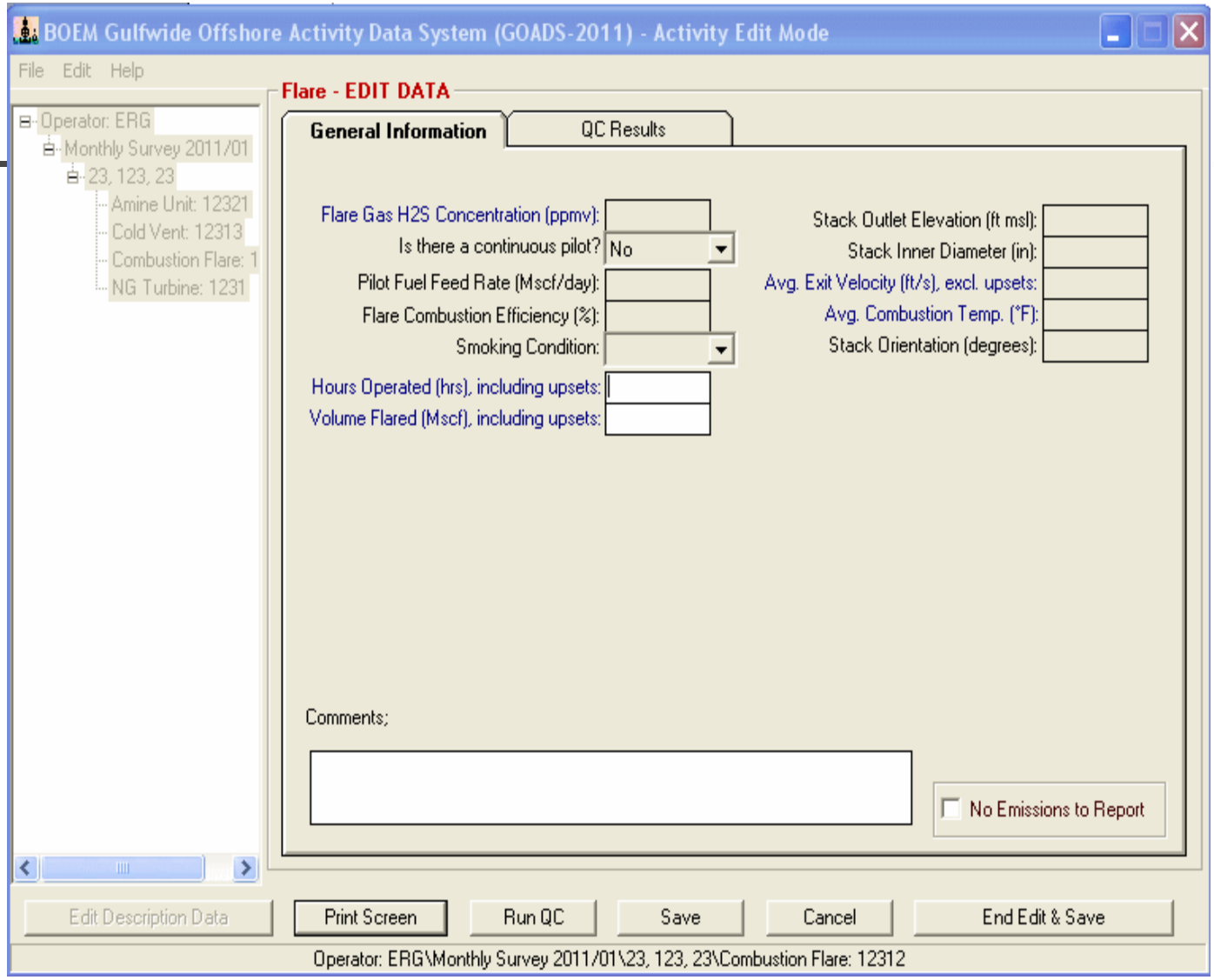
Technical Issues

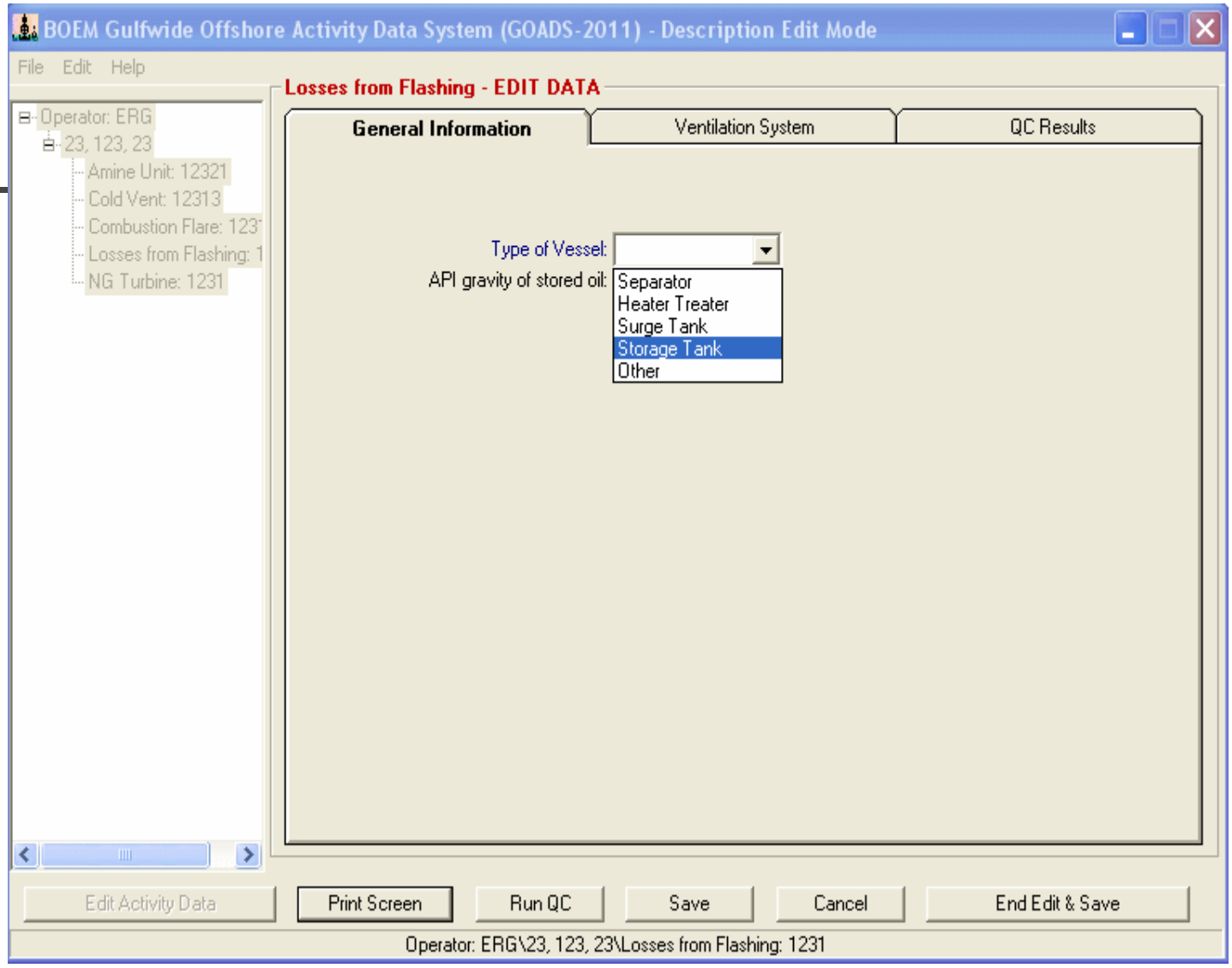
- Volume vented
- Volume flared
- Losses from flashing

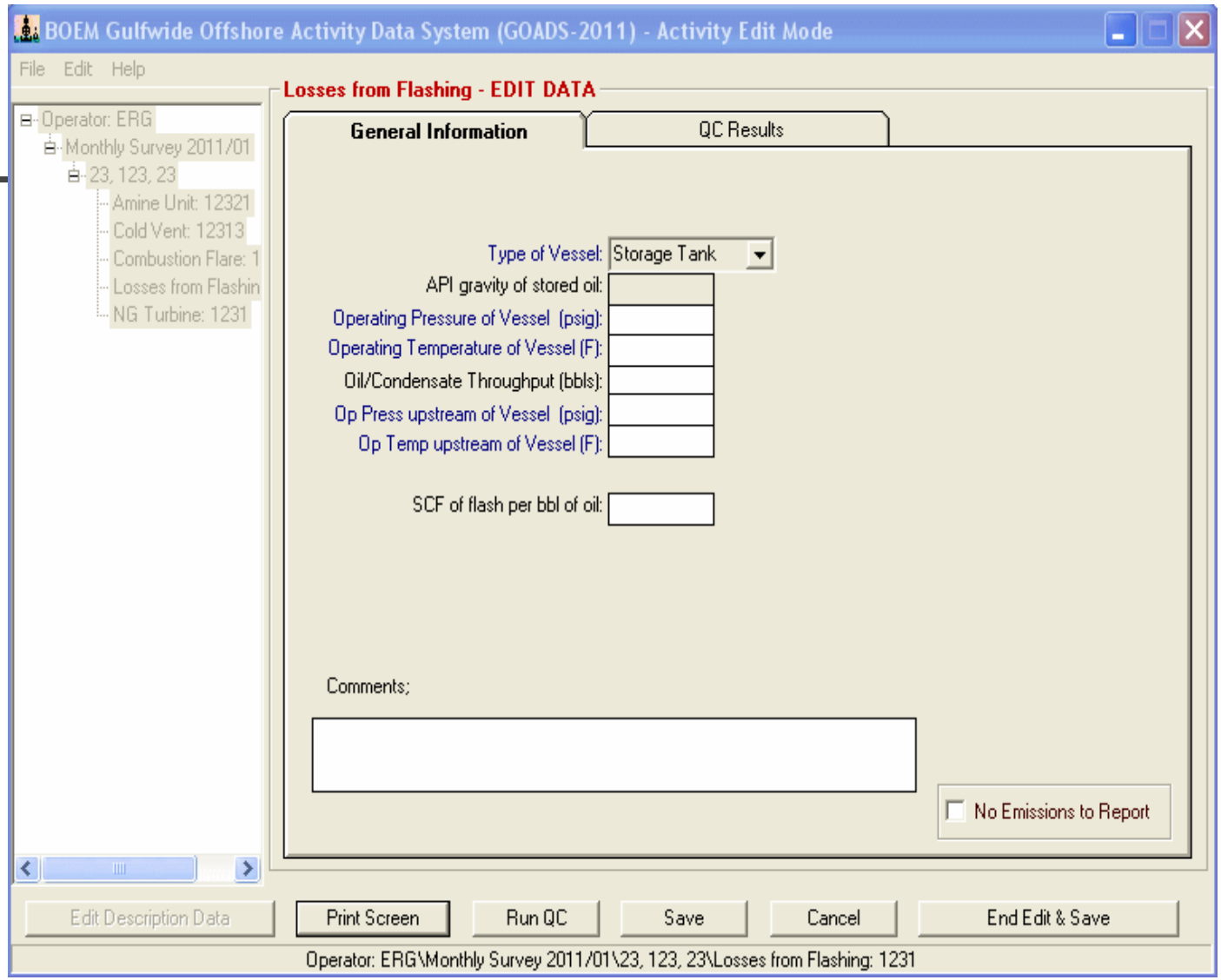

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
NG Turbine: 1231
Vent - EDIT DATA
General Information
Control Equipment
QC Results
Vent Type:
High Pressure
Low Pressure
Stack Outlet Elevation (ft msl):
Stack Inner Diameter (in):
Avg. Exit Velocity (ft/s), excl. upsets:
Avg. Exit Temperature (°F):
Stack Orientation (degrees):
Installed Control Equipment:
Condenser Temperature (°F):
Condenser Pressure (psia):
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\Cold Vent: 12313


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File
Edit
Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
NG Turbine: 1231
Vent - EDIT DATA
General Information
QC Results
Vent Type:
Hours Operated (hrs), including upsets:
Volume Vented (Mscf), including upsets:
Vent Gas H2S Concentration (ppmv):
Vent Gas VOC Concentration (ppmv):
Avg Molecular Weight of VOCs (lb/lb-mol):
Stack Outlet Elevation (ft msl):
Stack Inner Diameter (in):
Avg. Exit Velocity (ft/s), excl. upsets:
Avg. Exit Temperature (°F):
Stack Orientation (degrees):
Installed Control Equipment:
Condenser Temperature (°F):
Condenser Pressure (psia):
Comments:
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23\Cold Vent: 12313

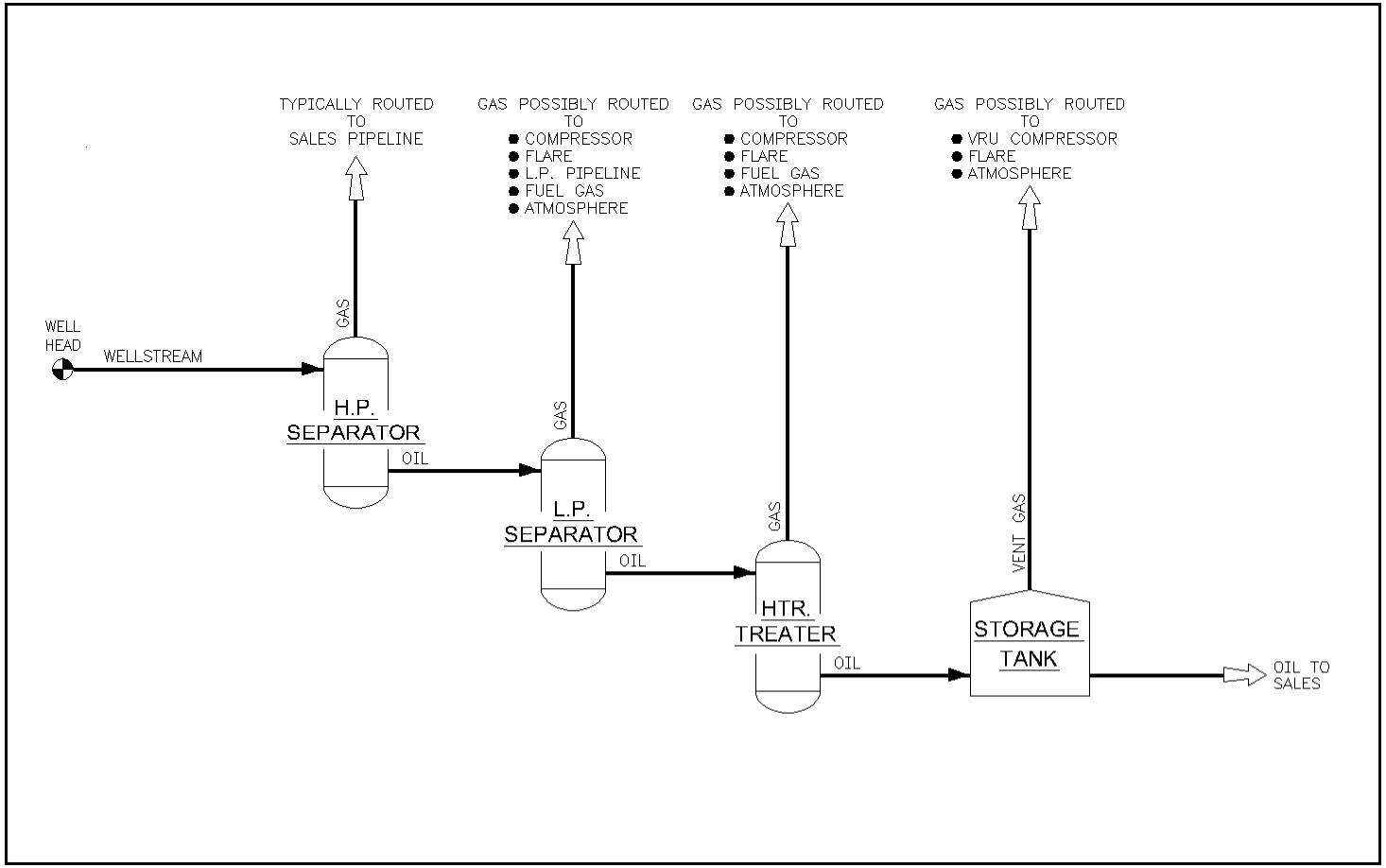

BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Operator: ERG
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
Combustion Flare: 123
NG Turbine: 1231
Flare - EDIT DATA
General Information
Control Equipment
QC Results
Flare Gas H2S Concentration (ppmv):
Is there a continuous pilot?
No
Pilot Fuel Feed Rate (Mscf/day):
Flare Combustion Efficiency (%):
Smoking Condition:
Stack Outlet Elevation (ft msl):
Stack Inner Diameter (in):
Avg. Exit Velocity (ft/s), excl. upsets:
Avg. Combustion Temp. (°F):
Stack Orientation (degrees):
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\Combustion Flare: 12312


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File
Edit
Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
Combustion Flare: 1
NG Turbine: 1231
Flare - EDIT DATA
General Information
QC Results
Flare Gas H2S Concentration (ppmv):
Is there a continuous pilot?
No
Pilot Fuel Feed Rate (Mscf/day):
Flare Combustion Efficiency (%):
Smoking Condition:
Hours Operated (hrs), including upsets:
Volume Flared (Mscf), including upsets:
Stack Outlet Elevation (ft msl):
Stack Inner Diameter (in):
Avg. Exit Velocity (ft/s), excl. upsets:
Avg. Combustion Temp. (°F):
Stack Orientation (degrees):
Comments;
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23\Combustion Flare: 12312


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Description Edit Mode
File
Edit
Help
Losses from Flashing - EDIT DATA
Operator: ERG
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
Combustion Flare: 123
Losses from Flashing: 1
NG Turbine: 1231
General Information
Ventilation System
QC Results
Type of Vessel:
API gravity of stored oil:
Separator
Heater Treater
Surge Tank
Storage Tank
Other
Edit Activity Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\23, 123, 23\Losses from Flashing: 1231


BOEM Gulfwide Offshore Activity Data System (GOADS-2011) - Activity Edit Mode
File
Edit
Help
Operator: ERG
Monthly Survey 2011/01
23, 123, 23
Amine Unit: 12321
Cold Vent: 12313
Combustion Flare: 1
Losses from Flashin
NG Turbine: 1231
Losses from Flashing - EDIT DATA
General Information
QC Results
Type of Vessel:
Storage Tank
API gravity of stored oil:
Operating Pressure of Vessel (psig):
Operating Temperature of Vessel (F):
Oil/Condensate Throughput (bbls):
Op Press upstream of Vessel (psig):
Op Temp upstream of Vessel (F):
SCF of flash per bbl of oil:
Comments;
No Emissions to Report
Edit Description Data
Print Screen
Run QC
Save
Cancel
End Edit & Save
Operator: ERG\Monthly Survey 2011/01\23, 123, 23\Losses from Flashing: 1231

Losses from Flashing



Losses from Flashing - GOR

- Direct measurement
- Vasquez-Beggs Correlation Equations (SPE Paper 6719)
- Griswold and Ambler GOR Chart Method (SPE Paper 7175)
- Lab analysis of pressurized oil sample gas-to-oil ratio (GOR)
- API E&P TANK Version 2 software
- Process simulators such as HYSYS or PROSIM

Losses from Flashing - GOR

- LP sep. oil to heater treater (HT) that dumps to atm. storage tank (T-1) that vents its flash gas to atmosphere.
- The LP sep. flash gas to the suction of the onsite compressor (i.e., the system). The heater treater vents its flash gas remotely to the low pressure vent system (V-1).

Losses from Flashing - GOR

- Create three flash records, FLASH-1, FLASH-2, and FLASH-3
- FLASH-1, enter data for the flash between the HP sep and the LP sep – routed to system
- FLASH-2, enter data for the flash between the LP to HT – vents to V-1
- FLASH-3, enter data for the flash between the HT and T-1 – vents locally
-

GOADS-2011 Demonstration and Questions